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EGG MORPHOLOGY OF *DRACONIA RUSINA* DRUCE FROM HONDURAS (LEPIDOPTERA: THYRIDIDAE)

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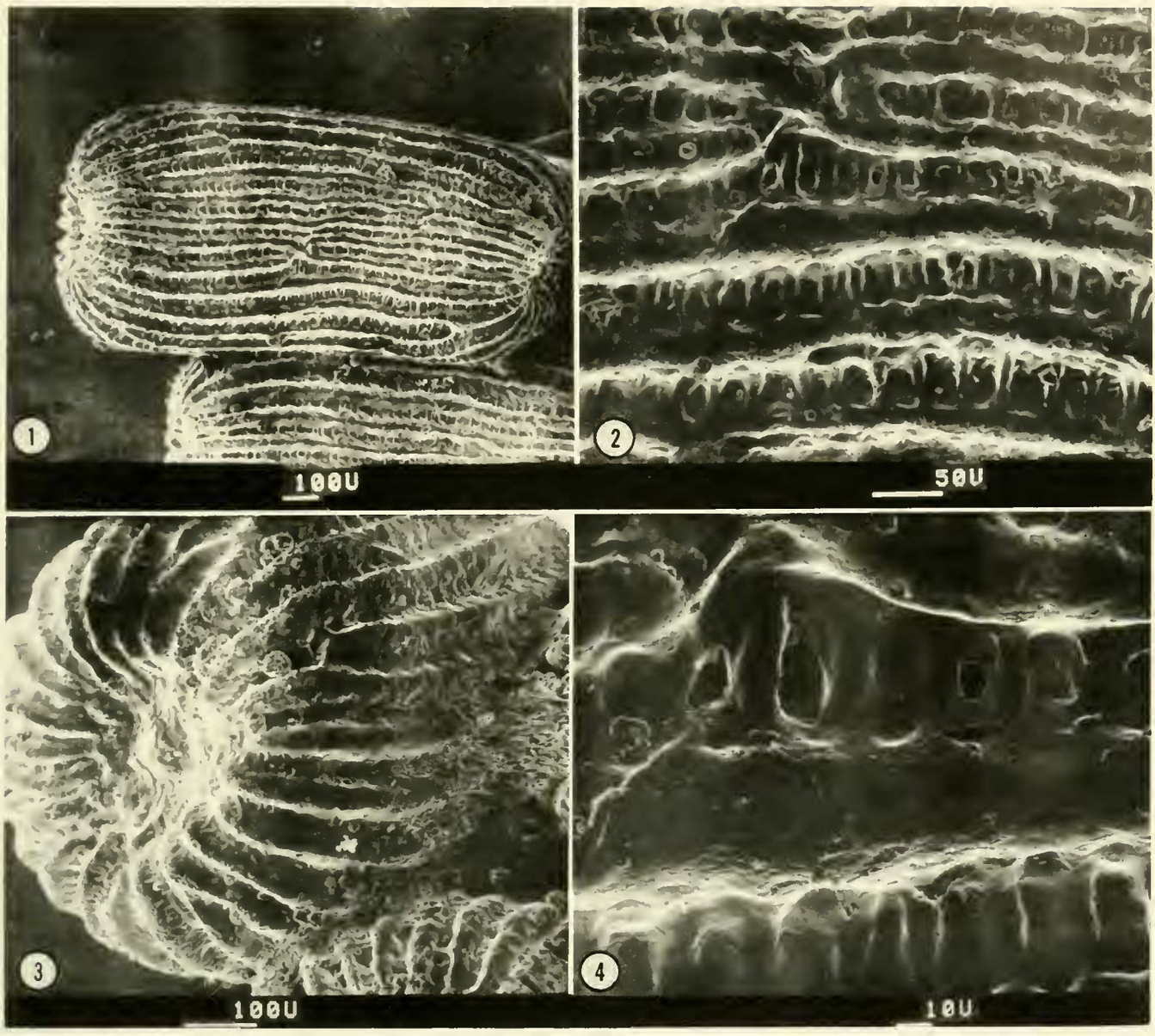
Abstract.—The egg and some first instar morphological features of *Draconia rusina* are given based on specimens collected in Honduras. This is the first record of *D. rusina* from Honduras and the second illustration of a Neotropical thyridid egg.

Key Words: *Draconia rusina,* Thyrididae, egg, first instar, Honduras

The systematic position of the Thyrididae is unclear. Munroe (1972) and Whalley (1976) tentatively united thyridids with other Pyraloidea. Common (1990) and Minet (1983) elevated this group to its own superfamily named Thyridoidea. Passoa (1985) suggested pupal pilifers as a synapomorphy of Pyralidae, Hyblaeidae, Pterophoridae, and Thyrididae. Although the presence of pilifers is apomorphic (by virtue of the outgroup comparison method where Monotrysia is a sister group to Ditrysia), this character is homoplastic because pupal pilifers also occur in the unrelated Papilionoidea (Mosher 1916). Very little is known about immature thyridids (Whalley 1976). Therefore, the egg and some first instar larval characteristics of *Draconia rusina* Druce are described here to aid in comparing the morphology of pyraloid families for systematic and identification purposes.

Draconia rusina is a large moth previously recorded from Guatemala, Panama and Venezuela (Gaede 1936). Several specimens of *D. rusina* were collected in Comayagua, Honduras (Department of Comayagua) at a blacklight during April, 1979, and again in March and May, 1980. Approximately 20 eggs were obtained in 1979 (parental female number 78, S. Passoa coll.) using cheesecloth as an oviposition substrate. They were either dried or preserved in 80% ethanol. After several years, a few dried eggs were mounted on aluminum stubs with Elmer's glue and sputter coated twice at different angles with gold-palladium for further study. These were examined with an information Scientific instrument DS-130 scanning electron microscope and photographed with Polaroid type 55 positive/negative film. Structural measurements, expressed in microns or millimeters, were made directly from the scale line on the photographs after dividing by the magnification. Egg terminology follows Downey and Allyn (1981).

The egg (Figs. 1–4) is cream-colored and subcylindrical with nearly parallel truncate ends (length 1.29–1.34 mm, mean = 1.30 mm, n = 4; width 0.61–0.68 mm, mean = 0.65 mm, n = 3). The chorion sculpturing is composed of approximately 21 ridges parallel to the long axis of the egg (Fig. 1) that converge and terminate at the micropylar shoulder (Fig. 3). Ridges across the long axis are usually straight and separated, although a few are crossed or bifurcate (Figs. 1, 2; inter-ridge distance 17.02–29.79 μm,



Figs. 1–4. Egg of *Draconia rusina* Druce. 1, lateral view (59×). 2, chorion ridges of the egg (235×). 3, oblique view of the micropyle (122×). 4, aeropyle apertures of chorion (580×). Scale lines marked in microns under each figure.

mean = 22.33 μm, n = 10). Aeropyle apertures occur on the chorion ridges (Figs. 2, 4) with one aperture per 21.28 to 28.40 μm (mean = 24.01 μm, n = 55). These apertures (Fig. 4) are irregularly shaped, with a width (opening parallel to the egg's long axis) of 6.38–19.15 μm (mean = 10.55 μm, n = 12) and a height of 10.34–20.69 μm (mean = 15.17 μm, n = 5). Micropylar end (Fig. 3) consists of a circular depression (diameter = 180.3 μm, n = 1) with a central raised tubercle (diameter = 77.87 μm, n = 1).

A review of published thyridid egg descriptions revealed some differences between taxa. Aniello (1980) mentioned a hexagonal pattern of cells on the chorion of *Dysodia sica* Druce but did not include longitudinal ridges in her illustration. In contrast, *Thyris fenestrella* (Scopoli) (Sarlet 1964), *Aglaopus pyrrhata* (Walker) (Common 1990) and *Draconia rusina* eggs all have chorionic ridges. All four genera (*Aglaopus, Draconia, Dysodia* and *Thyris*) share a rounded, truncate apex which may be a general characteristic of thyridid eggs. Common (1990), Aniello (1980) and Sarlet (1964) mention that thyridids have upright eggs. The location of the micropyle in *D. rusina* is consistent with this type of egg.

Although our *Draconia rusina* eggs never

hatched, dissection revealed a fully developed larva within the egg shell. First instar larva of *D. rusina* have a short front, a bisetose SV group and apparently only one L seta on the thoracic segments, uniordinal crochets in a circle, and long setae on the anal shield. The latter character is shared with mature *Thyridopyralis* larvae which also have long setae on the anal shield. Aniello (1980) stated the crochets of first instar *Dysodia sica* larvae are in a biordinal circle, but this arrangement was not found in *Draconia rusina.*

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Literature Cited

Aniello, A. 1980. Life history of *Dysodia sica* (Lepidoptera: Thyrididae) in Panama. Psyche 87: 121–130.

Common, I. F. B. 1990. Moths of Australia. E. J. Brill, Netherlands. 535 pp.

Downey, J. C. and A. C. Allyn. 1981. Chorionic sculpturing in eggs of the Lycaenidae. Part 1. Bulletin of the Allyn Museum 61: 1–29.

Gaede, M. 1936. Thyrididae. In Seitz, A. (ed.). Macrolepidoptera of the World. American Bombyces and Sphinges. A. Kernen, Stuttgart. 1327 pp.

Minet, J. 1983. É'tude morphologique et phylogénétique des organes tympaniques des Pyraloidea. I. Généralite's et homologies (Lep. Glossata). Annales de la Société Entomologique de France 19: 175–207.

Mosher, E. 1916. A classification of the Lepidoptera based on characters of the pupa. Bulletin Illinois State Laboratory of Natural History 12: 1–159.

Munroe, E. 1972. Pyraloidea. Pyralidae (part). *In* Dominick, R. B., et al. (eds.). The Moths of America North of Mexico. Fasicle 13.1A. E. W. Classey, London. 134 pp.

Passoa, S. 1985. Taxonomy of the larvae and pupae of economically important Pyralidae in Honduras. M.S. thesis. University of Florida, Gainesville. 486 pp.

Sarlet, L. 1964. Iconographie des oeufs de Lepidopteres belges (Rhopalocera-Heterocera). Deuxieme partie. Heterocera: Bombycides-Sphingides. Memoires de la Société Royale d'Entomologie de Belgique 29: 1–172.

Whalley, P. E. S. 1976. Tropical leaf moths. A monograph of the subfamily Striglininae (Lepidoptera: Thyrididae). Bulletin of the British Museum of Natural History. 194 pp.